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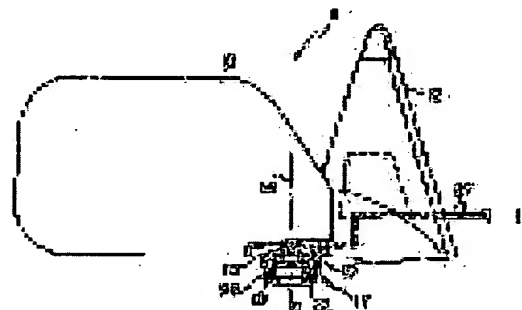
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(54) VEHICULAR DOOR MIRROR WITH ILLUMINATING LAMP

(57)Abstract:

PURPOSE: To provide an illuminating-lamp-equipped vehicular door mirror such that as the door mirror is placed upright or stored, a lamp main body is moved correspondingly to prevent a sense of mismatch, and that the illuminating range can be fixed.

CONSTITUTION: A lamp main body 17 for illuminating road surfaces is secured to the lower surface of a mirror base 12 connecting a door mirror main body 11 to an automotive body, and is such that the control of turning on/off of its light source 16 is effected in conjunction with the control of placing upright or storing the door mirror main body 11.



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[Claim(s)]

[Claim 1] The door mirror for vehicles with a lighting lamp characterized by for standing-up / storing control of the aforementioned door mirror main part being interlocked with, and performing lighting / putting-out-lights control of the light source of the aforementioned main part of a lamp while fixing the main part of a lamp which illuminates a road surface to the undersurface of the mirror base which connects a door mirror main part and the body.

[Claim 2] The door mirror for vehicles with a lighting lamp according to claim 1 characterized by making the cross direction of the body carry out simultaneously coincidence of the longitudinal direction of this light source while using a tubular thing for the aforementioned light source.

[Detailed Description of the Invention]

[0001]

[Industrial Application] this invention relates to the door mirror for vehicles, and the door mirror for vehicles with a lighting lamp which formed the lamp which illuminates a step especially.

[0002]

[Description of the Prior Art] Even if it is the darkness of night, in order to enable it to perform the check of the position of the doorknob of the body, or a step from the former, the equipment which controls lighting and putting out lights of the lamp formed near the door by remote control equipment is known.

[0003] For example, the technology of forming a lamp in the body lower part near the door, receiving the door unlocking signal from remote control equipment to JP,62-177864,U, and making it turning on a predetermined-time lamp is indicated.

[0004] this applicant was indicated by the technology mentioned above and JP,2-102853,A -- while remote control equipment performed locking and unlocking, organic combination with the technology of performing standing-up / storing control of a door mirror main part was aimed at, and Japanese Patent Application No. No. 247387

[six to] is proposed

[0005] According to the technology concerning this application, the main part of a lamp is attached in mirror housing of a door mirror main part, for example, storing of a door mirror main part is performed by operation of the hand switch of the vehicle interior of a room at the time of alighting, and standing up of a door mirror main part and lighting of a lamp are performed by operation of remote control equipment at the time of entrainment. And operation of standing up and storing of the door mirror main part of body right and left is not made to produce gap, but it is made not to give sense of incongruity.

[0006]

[Problem(s) to be Solved by the Invention] However, if it was in this kind of door mirror for vehicles, since the main part of a lamp was attached in mirror housing of a door mirror main part, standing-up / storing operation of a door mirror main part was interlocked with, the main part of a lamp moved circularly focusing on the rotation supporting point of a door mirror main part, and there was fault it not only gives sense of incongruity, but that gap will arise in the lighting range.

[0007] this invention was made against the background of such the actual condition, and aims at offering the door mirror for vehicles with a lighting lamp which standing-up / storing operation of a door mirror can be interlocked with, and the main part of a lamp can move, cannot give sense of incongruity, and can moreover fix the lighting range.

[0008]

[Means for Solving the Problem] In order to attain this purpose, let it be a summary to interlock with [control / standing-up / storing / the aforementioned door mirror main part] invention according to claim 1, and to perform lighting / putting-out-lights control of the light source of the aforementioned main part of a lamp while it fixes the main part of a lamp which illuminates a road surface to the inferior surface of tongue of the mirror base which connects a door mirror main part and the body.

[0009] Moreover, invention according to claim 2 makes it the summary to have made the cross direction of the body carry out simultaneously coincidence of the longitudinal direction of this light source while using a tubular thing for the aforementioned light source.

[0010]

[Function] According to such invention according to claim 1, the main part of a lamp which illuminates a road surface is fixed to the inferior surface of tongue of the mirror base which connects a door mirror main part and the body, this main part of a lamp is interlocked with standing-up / storing control of a door mirror main part, and lighting /

putting-out-lights control of the light source is performed.

[0011] Moreover, outgoing radiation of the lighting light mainly concerned with the longitudinal direction of the body by this is not only carried out, but according to invention according to claim 2, the tubular thing prolonged in a body cross direction is used for the light source, and it can prevent generating of the whizzing sound generated at the time of a run of the body.

[0012]

[Example] Hereafter, the door mirror example for vehicles with a lighting lamp of this invention is explained based on a drawing.

[0013] (The 1st example) In drawing 1 and drawing 2 , the door mirror for vehicles with a lighting lamp is equipped with the door mirror main part 11 and the base 12 which equips with this door mirror main part 11 the body which omits illustration.

[0014] The mirror housing 13 is connected with the support shaft (illustration ellipsis) prepared in the base 12, and, thereby, the door mirror main part 11 is supported to revolve possible [rotation]. A sign 14 is the axial center of a support shaft.

[0015] In the mirror housing 13, the power unit (illustration ellipsis) for performing switch with the standing-up state which is rotation of the door mirror main part 11, i.e., the busy condition to which the mirror plane which is not illustrated meets body right and left, and the storing state where a mirror plane meets a body cross direction, and tilting of a mirror plane is prepared. In addition, standing-up / storing control of the door mirror main part 11 is performed by the remote control equipment (illustration ellipsis) outside a vehicle besides the manual operation by the hand switch (illustration ellipsis) in in the car.

[0016] On the other hand, the main part 17 of a lamp which has the light source 16 for illuminating a road surface protrudes on the lower part of the attachment section 15 which established the support shaft of the base 12. In addition, lighting / putting-out-lights control of the light source 16 is later mentioned for details, although it is performed by hand operation, remote control equipment, etc. like standing up and storing of the door mirror main part 11 and also is controlled by turning on and off of an ignition key.

[0017] The main part 17 of a lamp is equipped with the packing 19 infixed between a lens 18, and the attachment section 15 and a lens 18 as shown in drawing 3 and drawing 4 .

[0018] A lens 18 is formed from U polymer which has green transparence, a transparent blue polycarbonate, or thermal resistance, and as shown in drawing 5 or drawing 9 , it is fabricated by the hood type which has opening 18a made front view (state of drawing 5)

elliptical. The packing 19 of a lens 18 and two or more ribs 20 prolonged in parallel with the direction of a small sum of a lens 18 in wall 18b which counters are arranged in parallel. Crevice 20a in alignment with the configuration of the light source 16 is formed in a rib 20, and the light source 16 is positioned by this crevice 20a. The screwhole 21 for attaching the main part 11 of a lamp in the attachment section 15 is formed in the direction both sides of a small sum of a lens 18.

[0019] As shown in drawing 10 or drawing 14 , packing 19 is packing made of rubber set by the configuration of opening 18a of a lens 18, and surrounds the outer wall of a lens 18. In order to hold the light source 16, the terminal assemblies 22 and 22 which engage with Mouthpieces 16a and 16a are formed in the longitudinal direction both ends of packing 19. The screwhole 21 prepared in the lens 18 and the breakthroughs 23a and 23a of the same axle are formed in the direction both ends of a small sum of packing 19. The code through holes 23b and 23b which consist a predetermined interval in a longitudinal direction are formed in the center of packing 19. The salients 19b and 19b which have the crevices 19a and 19a which fix the light source 16 by in collaboration with crevice 20a of a lens 18 in contact with Mouthpieces 16a and 16a are formed in the ends approach of the longitudinal direction of packing 19.

[0020] In addition, based on operation of the hand switch mentioned above or remote control equipment, the light source 16 can be supplied and asked a power supply, and the wiring code 27 is connected to the terminal assembly 22.

[0021] In the above-mentioned composition, when attaching the main part 17 of a lamp, as shown in drawing 15 and drawing 16 , the end of the wiring codes 27 and 27 is penetrated to the code through holes 23b and 23b of packing 19, and this one penetrated edge each is equipped with terminal assemblies 22 and 22.

[0022] Next, after making Mouthpieces 16a and 16a engage with terminal assemblies 22 and 22 and making the light source 16 hold, a lens 18 is made to hold to packing 19, and it considers as a unit state, and a tape 18 is twisted around a periphery, in order to maintain this unit state, as shown in drawing 16 .

[0023] on the other hand, the main part 17 of a lamp of the unit state attached to this business contacts the attachment section 15 in packing 19, before attaching the mirror main part 11 to the base 12 -- making -- a screwhole 21 and insertion -- a hole -- it is fixed by making the screw 24 in which 23a was made to insert screw in the attachment section 15, and a tape 28 is removed after this fixation

[0024] Under the present circumstances, it sticks to the V character slot 26 where the V character heights 25 formed in the end face which meets opening 18a of a lens 18 by bolting of a screw 24 were formed in packing 19, and waterproofness is secured. In

addition, since packing 19 has elasticity, there may not be the V character slot 26.

[0025] If an ignition key is turned off after a run when it attaches to the body which, on the other hand, does not illustrate such a door mirror main part 11 for example, in order to judge it as alighting, the light source 16 will light up and a step will be illuminated. Under the present circumstances, since the light source 16 has extended in the body longitudinal direction, it mainly illuminates a body cross direction.

[0026] Moreover, when this state gets off and the instruction signal of a door lock is made to send with remote control equipment, while a door is locked, the door mirror main part 11 rotates and it will be in a storing state. Under the present circumstances, the light source 16 is automatically switched off after predetermined-time progress (for example, 15 seconds).

[0027] Next, the door mirror main part 11 rotates and it will be in a standing-up state at the same time the lock of a door will be canceled, if the instruction signal of door unlocking is made to send with remote control equipment in order to get on, and the light is switched on simultaneously and the light source 16 also illuminates a step.

[0028] And if entrainment is completed from this state and an ignition key is turned on (ACC ON), it will judge that entrainment was completed and the light source 16 will put out the light. In addition, tilting of a mirror plane is possible only when it is a mirror switch, i.e., the neutral state which standing up of the door mirror main part 11 completed.

[0029] Thus, since the main part 17 of a lamp which has the light source 16 is being fixed to the lower part of the base 12, the lighting position of the light source 16 is fixed, standing-up / storing operation of the door mirror main part 11 is interlocked with, the main part 17 of a lamp does not move and the door mirror main part 11 not only does not give sense of incongruity, but can illuminate the fixed range irrespective of standing-up / storing operation of the door mirror main part 11.

[0030] Moreover, the waterproofness by the side of the base 12 and a lens 18 can be secured by one packing 19, without part cost soaring by making packing 19 contact the direct base 12, using the kind of housing for being only a lens 18 and packing 19 as a wrap member, and fixing the light source 16 to the other parts 12, for example, the base, as unnecessary.

[0031] Furthermore, attachment by the base 12 can be easily performed by having made the main part 17 of a lamp into the unit state.

[0032] (The 2nd example) Drawing 19 - drawing 22 show the 2nd example of this invention, in the 1st example of the above, it fixes in the state where it was made to meet, the longitudinal directions, i.e., the body right-and-left ends, of the light source 16,

and give the same sign to the composition same in addition as the 1st example of the above, and omit the explanation.

[0033] The main part 37 of a lamp is equipped with a lens 38 and packing 39 like the 1st example.

[0034] A lens 38 is formed from green transparence or a transparent blue polycarbonate, and as shown in drawing 5 or drawing 9 , it is fabricated by the hood type which has opening 38a made front view (state of drawing 5) elliptical. The packing 39 of a lens 38 and two or more ribs 40 prolonged in parallel with the direction of a small sum of a lens 38 in wall 38b which counters are arranged in parallel. Crevice 40a in alignment with the configuration of the light source 16 is formed in this rib 40, and the light source 16 is positioned by this crevice 40a. The screw hole 41 for attaching the main part 11 of a lamp in the attachment section 15 is formed in the direction both sides of a small sum of a lens 38. The V character heights 45 are formed in the end face in alignment with opening 38a of a lens 38.

[0035] As shown in drawing 10 or drawing 14 , packing 39 is packing made of rubber set by the configuration of opening 38a of a lens 38, and surrounds the outer wall of a lens 38. In order to hold the light source 16, the terminal assemblies 42 and 42 which engage with Mouthpieces 16a and 16a are formed in the longitudinal direction both ends of packing 39. The screw hole 41 prepared in the lens 38 and the breakthroughs 43a and 43a of the same axle are formed in the direction both ends of a small sum of packing 39. The code through holes 43b and 43b which consist a predetermined interval in a longitudinal direction are formed in the center of packing 39. The salients 39b and 39b which have the crevices 39a and 39a which fix the light source 16 by in collaboration with crevice 40a of a lens 38 in contact with Mouthpieces 16a and 16a are formed in the ends approach of the longitudinal direction of packing 39. The V character salient and the V character slot 46 to stick are formed in packing 39.

[0036] By considering as such composition, restrictions that application of the 1st example is difficult are avoided in the attachment to the base where a configuration changes with types of a car.

[0037] By the way, in the above 1st and the 2nd example, the longitudinal direction of the light source 16 is fixed in the state where the body longitudinal direction was made to meet. By fixing so that the longitudinal direction of the light source 16 may be made to meet a body cross direction and the longitudinal direction of a lens may meet a body cross direction similarly to the longitudinal direction of lenses 18 and 37 having been fixed along with the body cross direction by this Resistance of the wind at the time of a body run decreases, and generating of the whizzing sound between the bodies can be

prevented.

[0038]

[Effect of the Invention] If it is in the door mirror for vehicles with a lighting lamp of this invention as explained above While fixing the main part of a lamp which illuminates a road surface to the inferior surface of tongue of the mirror base which connects a door mirror main part and the body By standing-up / storing control of the aforementioned door mirror main part being interlocked with, and performing lighting / putting-out-lights control of the light source of the aforementioned main part of a lamp, standing-up / storing operation of a door mirror can be interlocked with, the main part of a lamp can move, sense of incongruity cannot be given, and, moreover, the lighting range can be fixed.

[Brief Description of the Drawings]

[Drawing 1] It is drawing which showed the door mirror for vehicles with a lighting lamp concerning the 1st example of this invention, and looked at the door mirror for vehicles of a door mirror main part standing-up state from the body transverse-plane side.

[Drawing 2] Similarly, it is the side elevation of the door mirror for vehicles of a door mirror main part standing-up state.

[Drawing 3] Similarly, it is the expanded sectional view of the important section fractured along with the body longitudinal direction.

[Drawing 4] Similarly, it is the expanded sectional view of the important section fractured along with the body cross direction.

[Drawing 5] Similarly, it is the front view of a lens.

[Drawing 6] Similarly, it is the cross section of the lens which meets the A-A line of drawing 5 .

[Drawing 7] Similarly, it is the cross section of the lens which meets the B-B line of drawing 5 .

[Drawing 8] Similarly, it is the rear view of a lens.

[Drawing 9] Similarly, it is the cross section of the lens which meets the C-C line of drawing 5 .

[Drawing 10] Similarly, it is the front view of packing.

[Drawing 11] Similarly, it is the cross section of packing which meets the D-D line of drawing 10 .

[Drawing 12] Similarly, it is the cross section of packing which meets the E-E line of drawing 10 .

[Drawing 13] Similarly, it is the rear view of packing.

[Drawing 14] Similarly, it is the cross section of packing which meets the F-F line of drawing 10 .

[Drawing 15] Similarly, it is a cross section in the state where the main part of a lamp was attached.

[Drawing 16] Similarly, it is the rear view in the state where the main part of a lamp was attached.

[Drawing 17] Similarly, it is the front view of the main part of a lamp in the state where the main part of a lamp was attached in the door mirror main part.

[Drawing 18] Similarly, it is the cross section of the main part of a lamp in the state where the main part of a lamp was attached in the door mirror main part.

[Drawing 19] It is drawing which showed the door mirror for vehicles with a lighting lamp concerning the 2nd example of this invention, and looked at the door mirror for vehicles of a door mirror main part standing-up state from the body transverse-plane side.

[Drawing 20] Similarly, it is the side elevation of the door mirror for vehicles of a door mirror main part standing-up state.

[Drawing 21] Similarly, it is the expanded sectional view of the important section fractured along with the body longitudinal direction.

[Drawing 22] Similarly, it is the expanded sectional view of the important section fractured along with the body cross direction.

[Description of Notations]

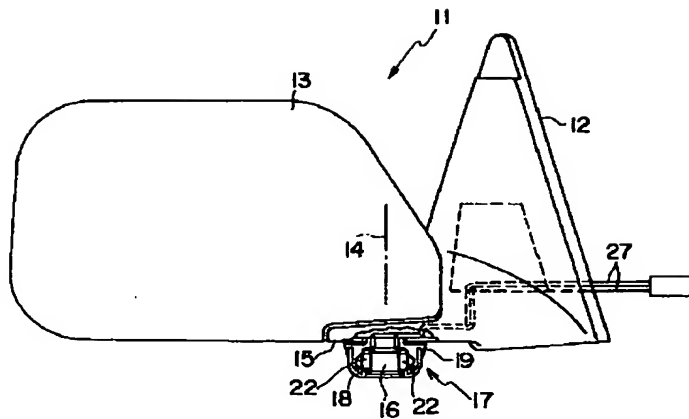
11 -- Door mirror main part

12 -- Base

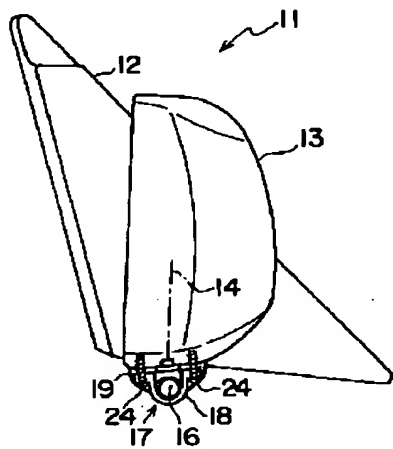
16 -- Light source

17 -- Main part of a lamp

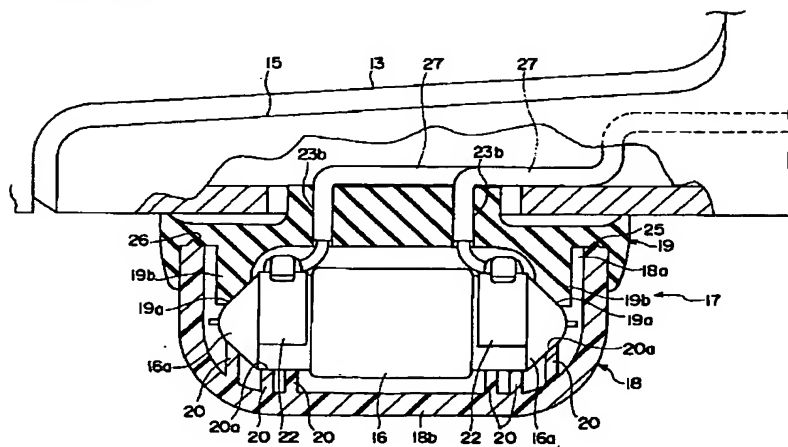
[Drawing 1]



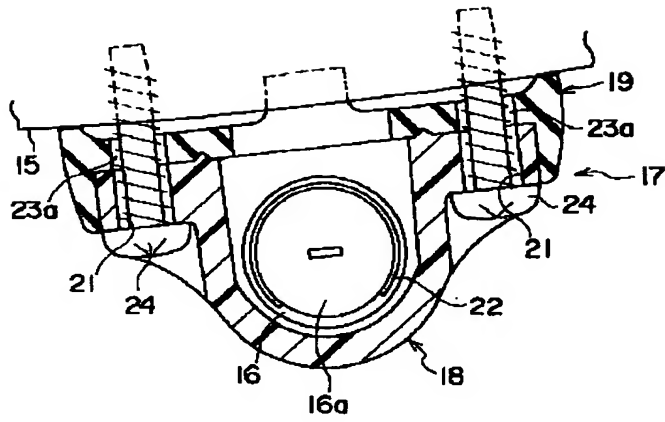
[Drawing 2]



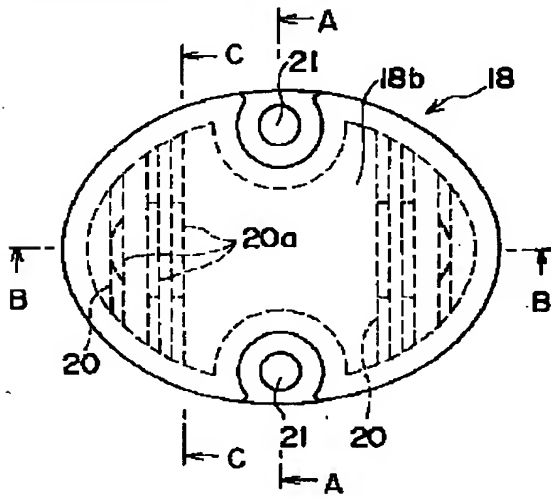
[Drawing 3]



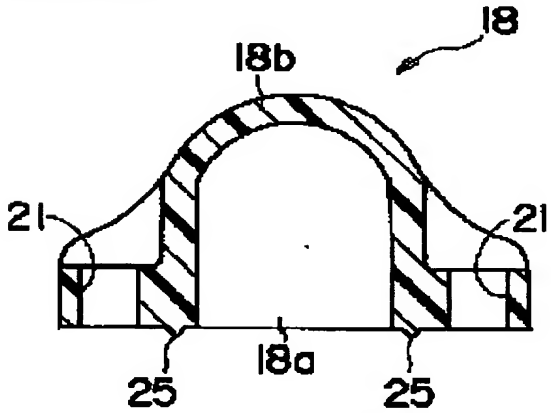
[Drawing 4]



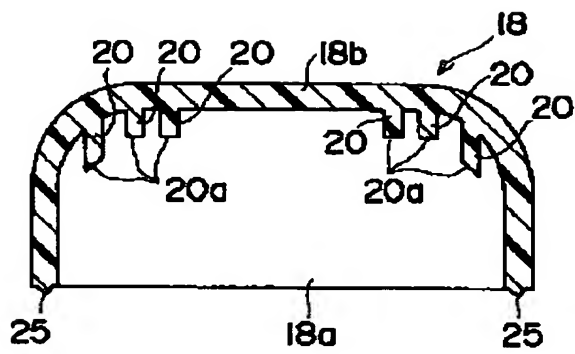
[Drawing 5]



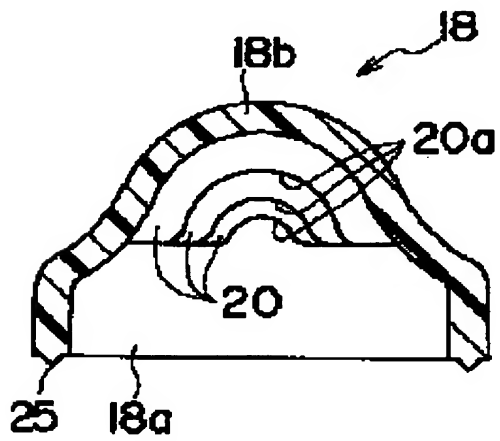
[Drawing 6]



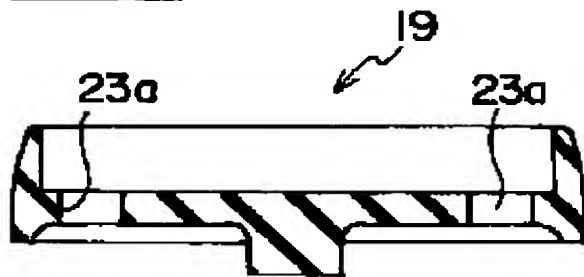
[Drawing 7]



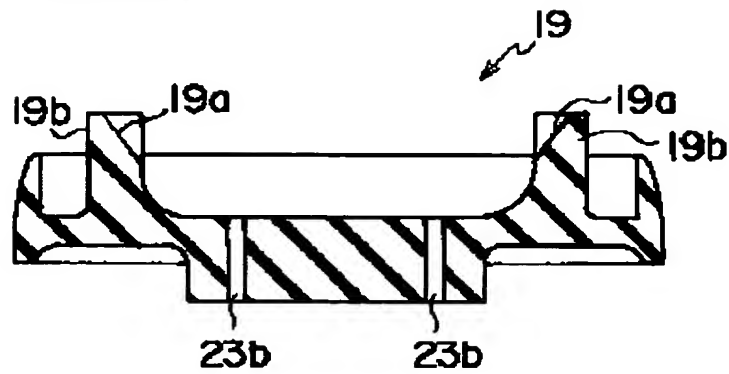
[Drawing 9]



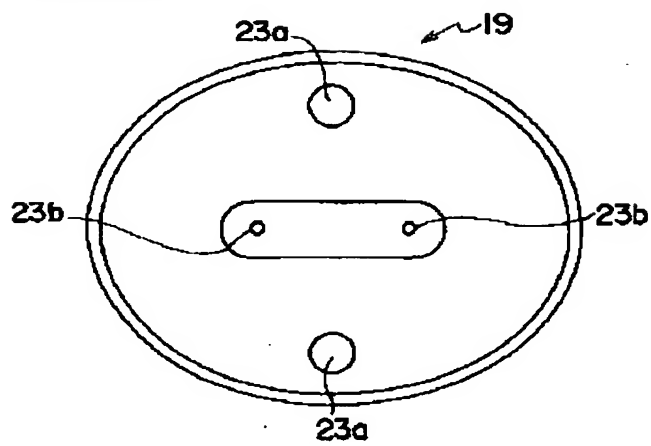
[Drawing 11]



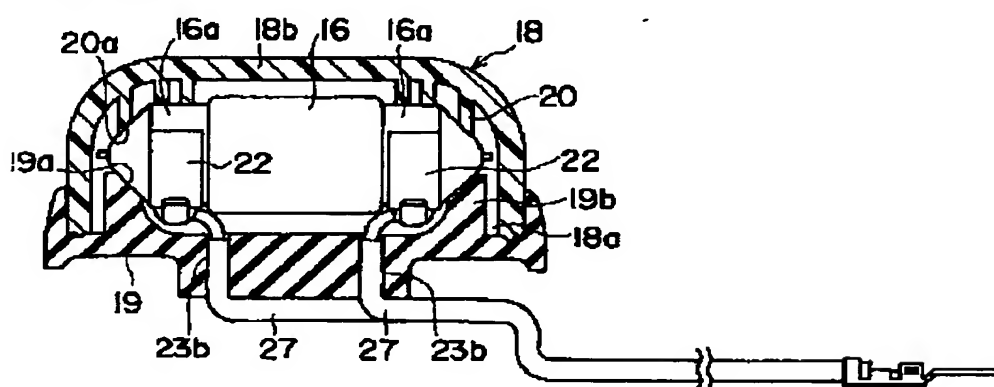
[Drawing 12]



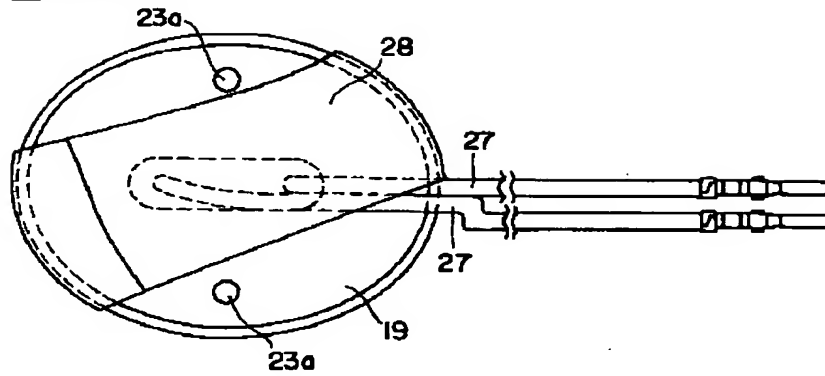
[Drawing 13]



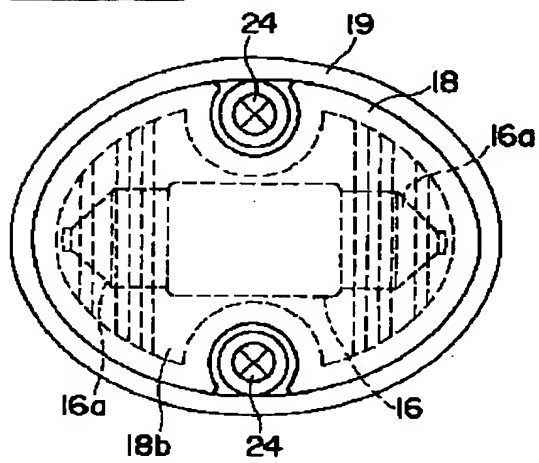
[Drawing 15]



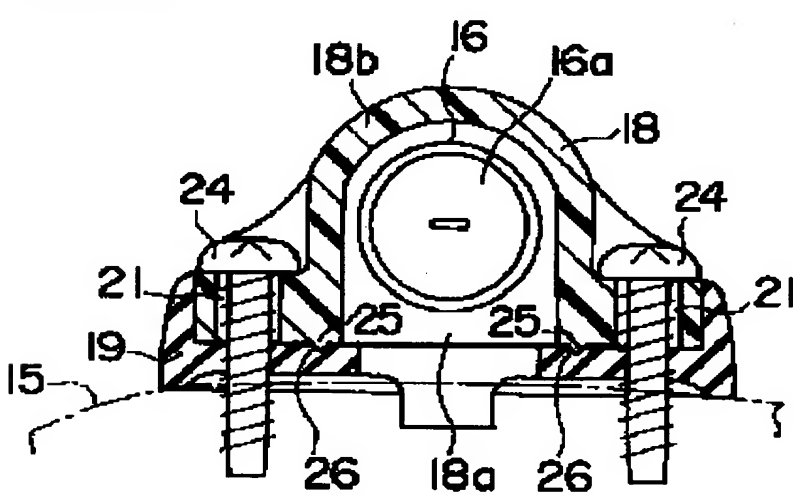
[Drawing 16]



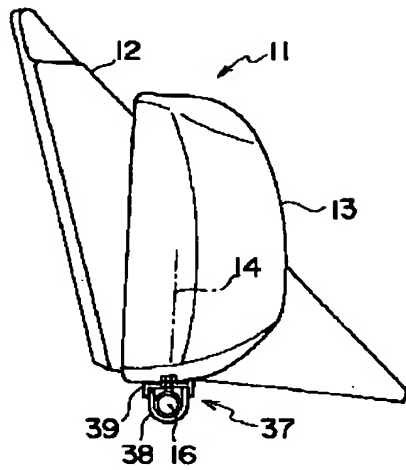
[Drawing 17]



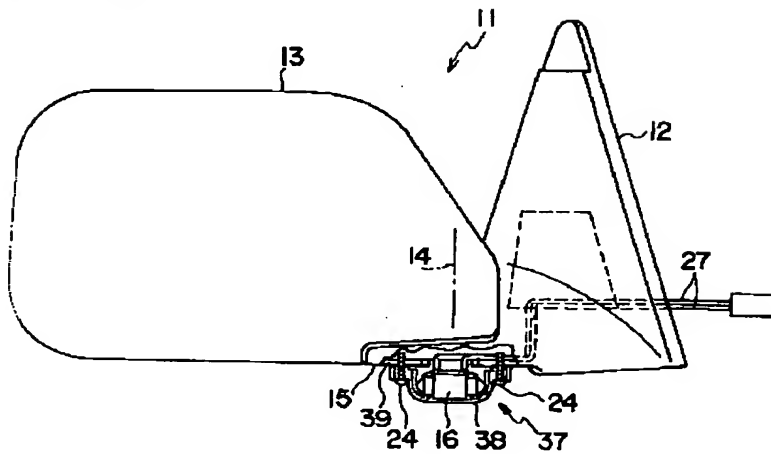
[Drawing 18]



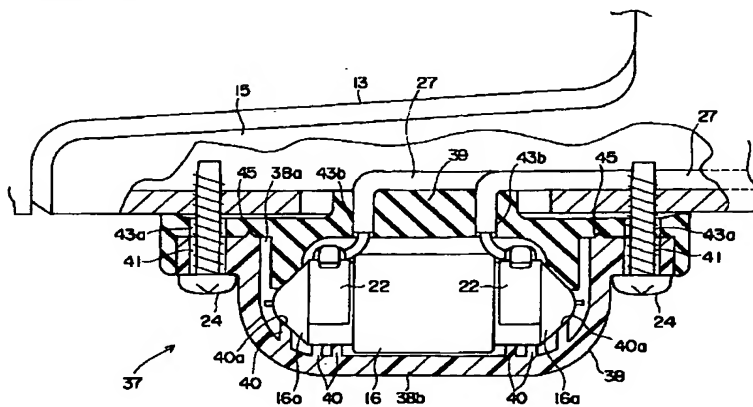
[Drawing 20]



[Drawing 19]



[Drawing 21]



[Drawing 22]